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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,928	09/06/2001	Loick Verger	034299-346	5963

7590

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EXAMINER

SUNG, CHRISTINE

ART UNIT PAPER NUMBER

2878

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,928

Applicant(s)

VERGER ET AL.

Examiner

Christine Sung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/6/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

1. This action is a supplemental action to the action mailed on 12/31/2003. There was an error in the correspondence, as the examiner did not specify the patent number of the Kobayashi reference.
2. The amendment filed on November 12, 2003 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (US Patent 5,435,608) in view of Kobayashi et al (US Patent 4,907,040).

Regarding claims 1, 2 and 7, Wei et al discloses a radiation imaging device comprising a detection matrix made of a semiconducting material comprising of pixels (Fig 1 f, element 110) to convert incident radiation into electric charges (Column 3, lines 55-59) and an electrical charges reading panel comprising several electronic devices (column 3, lines 55-66), each electronic device being integrated by pixel (column 3, lines 63-66), characterized in that each detecting matrix is made of a layer of semiconducting material deposited in vapor phase on the electric charges reading panel (Column 5, line 60-Column 6, line 10). Wei does not specifically disclose that the detection layer is made of a continuous layer of semiconducting material deposited in vapor phase. However, this placement and method of placement of semiconducting material is well known in the art, as demonstrated by Kobayashi (column 24, lines 49-52). It

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would have been obvious to one having ordinary skill in the art at the time the invention was made to have included the continuous layer of semiconducting material deposited in vapor phase, as a continuous layer would offer a greater detection area, thus increasing the effective detection area.

Regarding claim 3, although Wei et al. does not explicitly state that the specific temperature of the deposition process of the semiconducting material be at a temperature that does not damage the electronic devices, it would have been obvious to one having ordinary skill in the art to have chosen a semiconducting material whose vaporization temperature would not exceed the highest tolerable temperature of the electronic devices, so as to not damage the device.

Regarding claims 5 and 6, the examiner interprets the claims to disclose that the feature sizes of the device are on the order of microns. Therefore, since the feature sizes of the device disclosed by Wei et al. are of the micron order, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the device disclosed by Wei et al., as the specific feature size of the device would only be a matter of design choice for applications such as radiation imaging, where micron sized feature sizes would further enhance imaging quality.

Regarding claim 8, Kobayshi discloses using an amorphous silicon semiconducting material. Kobayashi discloses the claimed invention except for using crystalline silicon as the semiconducting material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used crystalline silicon, since it has been held to be within the general skill of a working in the art to select a known material on the basis of its suitability for

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the interned use as a matter of obvious design choice. *In re Leshin*, 227 F 2d 197, 125 USPQ 416 (CCPA 1960).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wei et al. (US Patent 5,435,608) in view of Kobayashi et al (US Patent 4,907,040) and further in view of Spartiotis (UK Patent Application 2319394).

Wei et al. in view of Kobayashi et al. discloses the limitations set forth in claim 2 but does not specifically disclose the type of semiconducting material used for the detection pixels. Spartiotis discloses in the abstract that CdTe can be used as a semiconducting material. Spartiotis demonstrates that CdTe may be used as a detection material, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the material disclosed by Spartiotis with the invention disclosed by Wei et al. in view of Kobayashi, as it is only a matter of design choice. It would have been obvious to one having ordinary skill in the art to have used a material such as CdTe, because, as the Spartiotis reference discloses, CdTe is often used as a conventional detector material because it is used widely for imaging applications.

Response to Arguments

6. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

7. The applicant's argument that the semiconducting material of Wei et al. is not continuous is not persuasive. Continuous semiconducting material deposition is well known in the art, as disclosed by Kobayshi, and should one of ordinary skill in the art need to increase the detection area of a given imaging device, the greater the effective detecting area is, the greater the field of

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view. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have included a continuous material using a vapor phase deposition method.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Sung whose telephone number is 571-272-2448. The examiner can normally be reached on Monday- Thursday 7-5 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christine Sung
Examiner
Art Unit 2878

CS



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